



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,699	02/18/2004	Huang Meng-Cheng	OP-092000358	8959
7590	12/29/2005			
Yi-Wen Tseng 4331 Stevens Battle Lane Fairfax, VA 22033			EXAMINER MCKINNON, TERRELL L	
			ART UNIT 3753	PAPER NUMBER
DATE MAILED: 12/29/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

E

Office Action Summary	Application No. 10/779,699	Applicant(s) MENG-CHENG ET AL.	
	Examiner Terrell L. McKinnon	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☒ This action is **FINAL**.
- 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 6, 7, 10 and 11 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 7, 10 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 - Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 - Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some * c) ☐ None of:
 - 1. ☐ Certified copies of the priority documents have been received.
 - 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

Receipt is acknowledged of applicant's amendment filed September 28, 2005. Claims 2-5, 8 and 9 have been canceled without prejudice. Claims 1, 6, 7, 10 and 11 are pending and an action on the merits is as follows.

Applicant's arguments with respect to claims 1, 6, 7, 10 and 11 have been considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michel et al. (EP 065679) in view of Lee et al. (U.S. 2003/0230398).

Michel discloses a heat dissipating device comprising:

- a bottom plate (3), having a bottom receiving chamber (7) recessed from a top surface;
- the top plate (2) and the bottom plate are covered by each other to form a planar shell, wherein the top and bottom receiving chambers are filled with work fluid;
- a hollow filling tube (12) and a wick structure;

Art Unit: 3753

- a plurality of supporting columns to enhance the strength of the planar shell.

Michel fails to disclose at least one hollow thermal expansion conductor, wherein one end of the thermal expansion conductor is inserted into the planar shell, and the other end thereof extends outside of the planar shell, such that the thermal expansion conductor is in fluid communication with the top and bottom receiving chambers; the thermal expansion conductor includes a tubular heat pipe heat plate and/or a columnar heat pipe; a plurality of fins through which the tubular heat pipe penetrate through; a proximal end of the thermal expansion conductor is embedded in the planar shell between the top and bottom plates, and the other end thereof extends outside of the planar shell; the thermal expansion conductor is at least partially embedded in the bottom plate; the thermal expansion conductor is at least partially embedded in the top plate; and a wick structure attached on the top and bottom plates.

3. However, Lee teaches at least one hollow thermal expansion conductor (30), wherein one end of the thermal expansion conductor is inserted into the planar shell, and the other end thereof extends outside of the planar shell, such that the thermal expansion conductor is in fluid communication with the top and bottom receiving chambers; the thermal expansion conductor includes a tubular heat pipe heat plate and/or a columnar heat pipe; a plurality of fins (27) through which the tubular heat pipe penetrate through; a proximal end of the thermal expansion conductor is embedded in the planar shell between the top and bottom plates, and the other end thereof extends outside of the planar shell; the thermal expansion conductor is at least partially

Art Unit: 3753

embedded in the bottom plate; and the thermal expansion conductor is at least partially embedded in the top plate.

Given the teachings of Lee, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the heat dissipating device of Michel with at least one hollow thermal expansion conductor, wherein one end of the thermal expansion conductor is inserted into the planar shell, and the other end thereof extends outside of the planar shell, such that the thermal expansion conductor is in fluid communication with the top and bottom receiving chambers; the thermal expansion conductor includes a tubular heat pipe heat plate and/or a columnar heat pipe; a plurality of fins through which the tubular heat pipe penetrate through; a proximal end of the thermal expansion conductor is embedded in the planar shell between the top and bottom plates, and the other end thereof extends outside of the planar shell; the thermal expansion conductor is at least partially embedded in the bottom plate; the thermal expansion conductor is at least partially embedded in the top plate; and a wick structure attached on the top and bottom plates.

Doing so would provide a thermally efficient heat dissipating structure for cooling heat-generated devices.

4. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michel et al. (EP 065679) in view of Ferro et al. (U.S. 4,145,708).

Michel discloses all of the above-mentioned claimed limitations except for a

Art Unit: 3753

hollow columnar heat pipe and/or a heat plate with one end embedded in the top plate and the other end extending outside of the planar shell, such that the columnar heat pipe is in fluid communication with the top and bottom receiving chambers.

5. However, Ferro teaches the use of a hollow columnar heat pipe with one end embedded in the top plate and the other end extending outside of the planar shell, such that the columnar heat pipe is in fluid communication with the top and bottom receiving chambers.

Given the teachings of Ferro, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the heat dissipating device of Michel with a hollow columnar heat pipe and/or a heat plate with one end embedded in the top plate and the other end extending outside of the planar shell, such that the columnar heat pipe is in fluid communication with the top and bottom receiving chambers.

Doing so would provide an alternate heat conducting arrangement for dissipating heat from heat-generated devices.

Response to Arguments

Applicant's arguments filed September 28, 2005 have been fully considered but they are moot in view of the Final Rejection as stated above.

Applicant's states, Lee nor Michel disclose or suggest the applicant's claimed invention.

Michel's invention as modified by Lee and Ferro discloses the applicant's claimed and disclosed limitations as stated above in the Final Rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

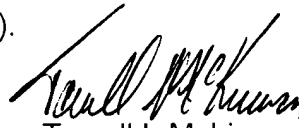
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L. Mckinnon whose telephone number is 571-272-4797. The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Blau can be reached on 571-272-4406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3753

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Terrell L. McKinnon
Primary Examiner
Art Unit 3753
December 27, 2005